REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Claims 1-7 have been cancelled in favor of new claims 8-14. Support for the new claims is provided in original claims 1-7, Figs. 4 and 6-8, and pages 7-13 of the specification.

Claims 1-7 were rejected, under 35 USC §102(e), as being anticipated by Miya (US 6,175,558). To the extent these rejections may be deemed applicable to new claims 8-14, Applicant respectfully traverses.

A feature of the present invention is to spread a known signal in a frequency axis direction. That is, it is a feature of the present invention that, where a transmission signal and a known signal are subjected to spreading processing in a transmission system using different spreading codes respectively, these signals are broken down into chips and subjected to frequency division multiplexing, so as to assign one chip data signal string per subcarrier for transmission. It is also a feature of the present invention to receive a transmission signal and a known signal broken down to individual chips, by a reception system, extract the known signal broken down to individual chips through despreading processing, while detecting a residual phase error using the extracted known signal, and

compensate for the received signals using the detected residual phase error.

The above noted features of the present invention have an advantage of achieving the effect of frequency diversity for a known signal, detecting residual phase errors at a high degree of accuracy in the fading environment, and extracting received signals at excellent error rates.

In contrast, Miya discloses a CDMA radio multiplex transmitting device that inserts pilot symbols in one channel only and executes transmission. According to this technique, where the pilot symbols are inserted, these pilot symbols are the only transmission signals. This technique has the advantage of eliminating interference against the pilot symbols from other transmission signals.

As noted above, the present invention is configured such that, where a transmission signal and a known signal are subjected to spreading processing using different spreading codes respectively, these signals are subjected to frequency division multiplexing, so as to assign one chip data signal string per subcarrier for transmission. Miya does not disclose this configuration of the present invention.

New claims 8-14 recite features of original claims 1-7, respectively. However, claims 8 and 13 now additionally recite

that information from each of a plurality of transmission signals and a known signal is multiplexed into every chip assigned to a different subcarrier. Claims 1 and 6, which recite features in common with new claims 8 and 13, were rejected based on the disclosure associated with Miya's Figs. 4 and 6 (Office Action page 3, penultimate paragraph).

Miya discloses in Fig. 4 that transmitting data 101 is separated into N+1 channels by a separation circuit 102 (Miya col. 4, lines 27-29). The signal of each channel is spread with a different spreading code by a spreading circuit 103, and the N+1 spread signals are multiplexed by a multiplex circuit 106 (Miya col. 4, lines 29-32). Pilot symbols (PL signal) 105 are inserted into one of the N+1 channels and spread with a spreading code 0 (col. 4, lines 33-35). As may be seen by examination of Miya's Figs. 5 and 6 and their accompanying descriptions in column 4, line 40, through column 5, line 24, the spread PL signal is spread with a single spread code and transmitted through a single channel at a time different from the transmission of the spread transmitting data.

Accordingly, Miya does not disclose all of the features recited in claims 8 and 13. Specifically, Miya does not disclose the claimed features whereby information from each of a plurality of transmission signals and a known signal is multiplexed into

every chip assigned to a different subcarrier. Therefore, allowance of claims 8 and 13 and all claims dependent therefrom is warranted.

Claims 10-12 and 14 recite features similar to those described above for distinguishing claims 8 and 13 from Miya. For the same reason these features distinguish claims 8 and 13 from Miya, so too do they distinguish claims 10-12 and 14. Therefore allowance of claims 10-12 and 14 is warranted.

Moreover, Miya fails to disclose all of the features of any of claims 10-12 and 14 in a single embodiment of the invention. As mentioned above, claims 10-12 and 14 recite features of original claims 3-5 and 7, respectively.

Regarding claims 10 and 14, the Office Action proposes that Miya discloses the features of claims 3 and 7 in the specification in: (1) columns 10-11, lines 66-5; (2) column 4, lines 30-32; (3) column 5, lines 13-17; and (4) columns 5-6, lines 55-5 (Office Action page 3, penultimate paragraph, through page 4, last paragraph).

However, Miya discloses: (1) a first embodiment of the invention, illustrated by Fig. 4, in column 4, lines 30-32 (see Miya col. 3, lines 25-27 and 62-63); (2) a modified version of the first embodiment, illustrated by Fig. 6, in column 5, lines 13-17 (see Miya col. 3, lines 30-31, and col. 5, lines 13-17);

(3) a second embodiment of the invention, illustrated by Fig. 7, in column 5, line 55, through column 6, line 5 (see Miya col. 3, lines 33-35, and col. 5, lines 26 and 35); and (4) an eighth embodiment of the invention, illustrated in Fig. 14, in columns 10-11, lines 66-5 (see Miya col. 3, lines 54-55, col. 10, lines 16 and 30). In short, the Office Action proposes that Miya discloses all of the features defining claims 10 and 14 when considering the combined features of Miya's first, second, and eighth embodiments of the invention.

Under 35 USC §102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim. *Gechter v. Davidson*, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997). A finding of anticipation requires that the reference describe all of the elements of the claim, arranged as in the claimed device. *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1349, 48 USPQ2d 1225, 1230 (Fed. Cir. 1998). It is hornbook law that anticipation must be found in a single device or process. *Studiengesellschaft Kohle, M.B.H. v. Dart Indus., Inc.*, 726 F.2d 724, 726-27, 220 USPQ 841, 842 (Fed. Cir. 1984). Simply put, a finding of anticipation requires that the reference disclose all of the claimed features in a single device and in the arrangement defined by the claim.

In accordance with the above discussion, Applicant submits that Miya does not disclose all of the features recited in either of claims 10 and 13 within a single embodiment of the invention. More specifically, the Office Action merely proposes that Miya discloses the claimed features of each claim when the features of three distinct embodiments (i.e., structures or methods) of Miya's invention are combined together. Since features of distinct embodiments may only be applied through an obviousness rejection and Miya has previously been disqualified as a 35 USC §103(a) reference, under the provisions of 35 USC §103(c), the anticipation rejection is not supported by the evidence and an obviousness rejection based on Miya is precluded. Therefore, allowance of claims 10 and 14 is warranted for this independent reason.

Original claims 4 and 5 recite features of original claim 3. As a result, claims 4 and 5 must necessarily have been rejected based upon the combined features disclosed by Miya in multiple distinct embodiments of the invention, as was the case with claim 3. Since new claims 11 and 12 recite features of original claims 4 and 5, allowance of claims 11 and 12 is also warranted for the independent reason warranting the allowance of claims 10 and 14.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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